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# Applications for the Global Asset and Information Registry (GAIR)

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*November 9, 1999*

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# Applications for the Global Asset and Information Registry (GAIR)

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## **I. Introduction and executive summary**

### **A. GAIR overview and summary**

A single registry is preferred for efficiency consistency and uniformity, maintainability, and reliability. Ideal is a single inter-operable database, but practicality may dictate a phased implementation, assuming a phased implementation raises issues of compatibility. It would be advantageous to make the integration of individual or industry specific databases into a larger more centralized one as seamless as possible. The problems associated with extracting and inserting records between systems would best be avoided by some sort of standardization.

The entire or limited history of an asset would be maintained depending on circumstance. Individual/corporate/group owners would control how much information is kept in an asset record and which is accessible by different classes of interested parties.

The database would be searchable by interested parties with authentication (owner provided). For instance, potential buyers: Owner would set a flag in the record that would place that asset for sale and name a price, or begin an auction. Assembled Goods and Services: Include as a finished good an asset record with all pertinent information about each sub-component assembly.

The order in which different interested parties access and populate the record could be material or immaterial. The goal is for the asset record ultimately to contain all records of all interested parties. Asset attributes could be filled in or added later and modified by other interested parties, and thus the producer may only populate a limited portion of the asset record, and subsequent transactions would populate other parts of the record. Thus, database asset record changes would reflect asset status changes and would be event (transaction or status change of asset) driven.

Early recording of asset: asset record created at production or sale of asset. This results in reduced or no 3<sup>rd</sup> party involvement – the point is to reduce the number of times data is transfer and “re-templating.” Because the asset record is created with the asset, there only need be one master record for all subsequent interested party transactions. Because these records reside in a central location, updates to any field occurs only once, all inquiries go to one central data-center, and the records are consistent. Producer generates record by compiling all records on asset, but for existing assets, those already purchased/owned before “registration at production/sale” is implemented. Asset record can always be created by owner (or other interested parties).

Owners know precisely what they own and have readily accessible proof of ownership and of the history of the asset. This helps them offer to sell, appraise, insure, service, and ship, and generally track their assets and portfolio. Producers would allow buyers and maybe potential buyers to view asset record, including component, assembly, test, warrant, and other records, thereby inciting the purchase as well as providing interface for subsequent purchaser needs regarding the asset.

### **B. Example of universal method of access: The Internet - HTML browser (authenticated)**

#### **1. Implementations for inputting and extracting records and updates to records**

- “oracle forms interface” for keyboard entry; or
- import of standard “flat files;” and/or
- standard paper forms which are scanned in (e.g. OCR);

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- "palm-top" or other basic hand held scanner type for mobile inventory/record entry;
- voice recognition.

Smart cards will be important for a truly global GAIR.

## 2. Potential registrants (registration initiators)

- producers;
- vendors (distributors, retailers);
- financiers (credit card, finance companies);
- insurance organizations;
- government (FBI, FDA, SEC, IRS, local gov., etc., in the case of anything regulated or taxed: guns, controlled substances, corporations, assets).

## 3. Example Asset classes

- real estate;
- vehicles;
- appliances and durable goods;
- weapons;
- digital objects;
- personal records (private, public, semi-public).

## 4. Ways to implement such a concept into the current or future marketplace?

- Establish new business;
- Incorporate into existing business or industry.

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## II. E-Registrar

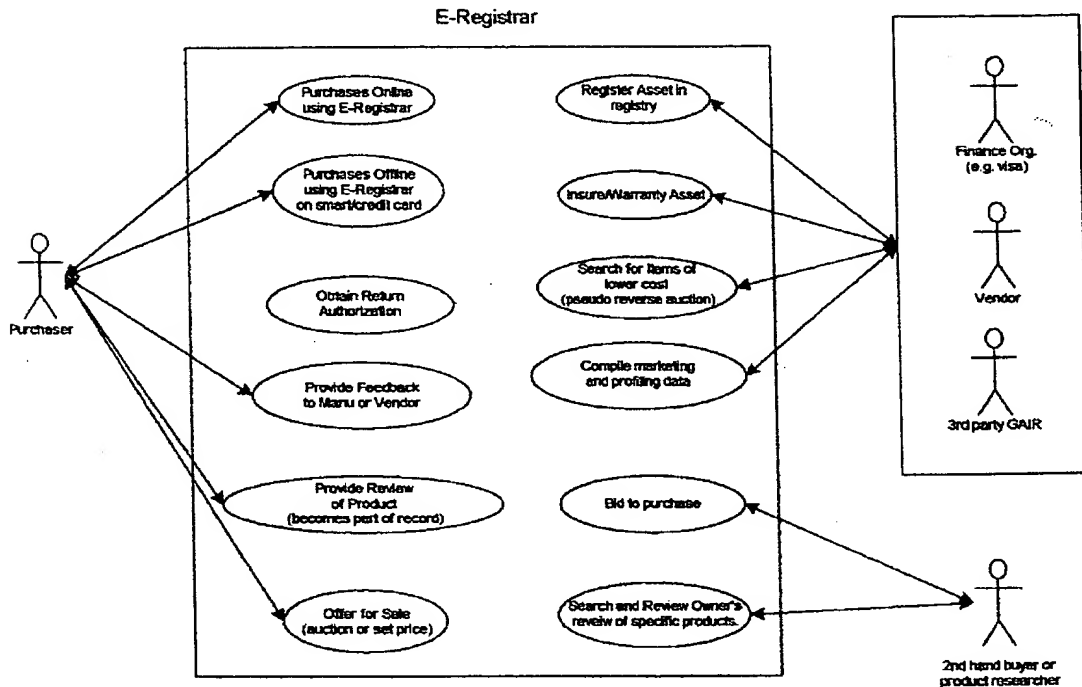


Figure 1. E-Registrar context diagram

### A. Business Methods utilizing asset registration concept

General Model 1.: A business offering an asset record generation and maintenance and other services as incentives to do business with that company (corporate or individual).

### B. Ways to incorporate GAIR into existing business:

#### 1. Finance: credit card service (e.g. VISA)

Because a vast majority of items are purchased online and traditionally with credit cards, the credit card company would offer a free service or services to consumers to incentivize them to use their card.

These services could comprise (among others):

- a) automatic asset registration;
- b) automatic insurance coverage of asset (includes extended warranty);
- c) automatic search of registry and other sources to identify other similar items of less cost, or the same item of less cost from a different vendor. Purchaser automatically notified by email for instance. Purchaser can then return the item or cancel the order, and get the lower cost item instead, or VISA could do it automatically for purchaser.

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## 2. Producer/ vendor/broker (includes digital objects)

Vendor gives the option to register asset in which case, if the purchaser chooses to E-register, the vendor creates and populates the asset record.

This registry data can be analyzed for marketing purposes, and would be particularly valuable if all records of purchased assets were maintained centrally such that all registered purchase would be known (also done on smart card?).

The incentives to the purchaser of having a registry of one's assets have already been enumerated. However, the vendor could additionally incentivize the purchaser with some sort of random give-away of "frequent asset registration points."

- a) centralized GAIR servers - sellers agree to provide uniform asset records.
- b) local proprietary servers - sellers maintain their own asset registry.

## 3. Individual and Corporate purchases - purchase with "E-Registrar" to automatically register an asset.

Example Business Model: GAIR.com

- a) Individuals and corporations register/subscribe with GAIR.com.
- b) GAIR.com provides an 'E-Registrar' unique to each subscriber. This could be digital (like E-wallet) for online purchases and encoded on a credit or smart card for off-line purchases which identifies purchaser's registry identifier.
- c) When subscriber makes a purchase, the E-registrar is used by vendor along with purchased assets specifications and financial details to create a new asset record, which is sent to and incorporated in the GAIR database.

## C. Claim generic concept of E-REGISTRAR

### 1. Automatic asset registration

"E-Registrar" similar to the "E-wallet" concept. Would submit personal E-Registrar to vendor, via digital file or tag when purchasing online, and via a smart/credit card if purchasing off-line.

### 2. Third party

Have a 3<sup>rd</sup> party that handles the transaction both financially (similar to E-wallet), as well as registering the asset. This 3<sup>rd</sup> party also initializes (or imports from vendor) an asset record.



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### III. Possible services provided by the generic GAIR

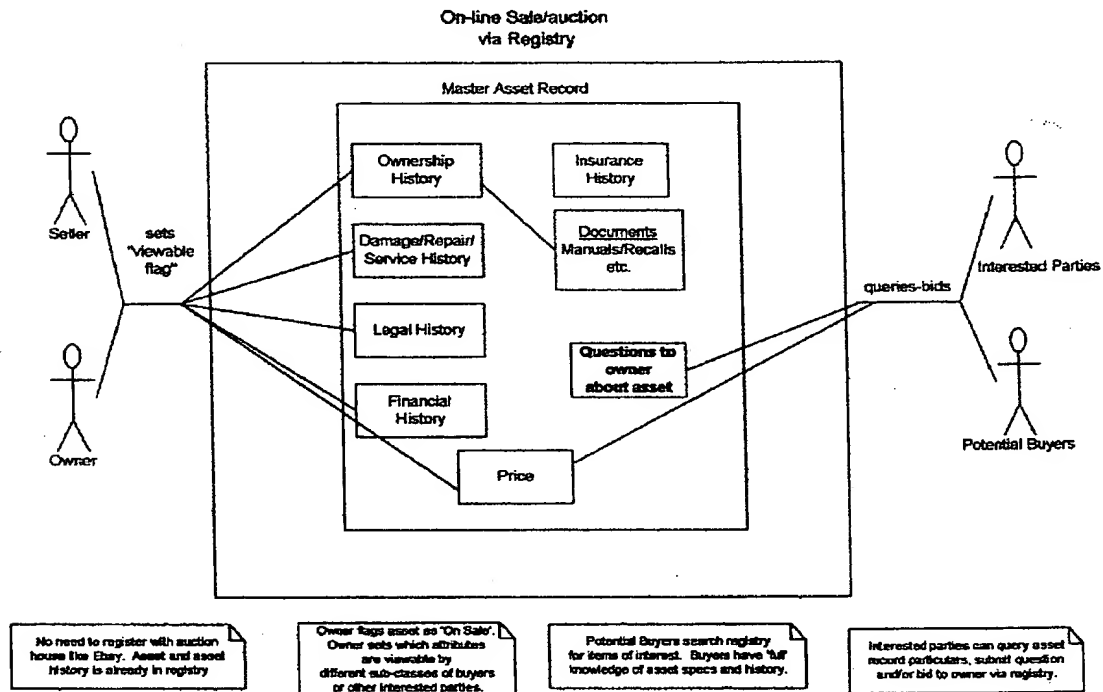


Figure 2. On-line sale/auction via registry context diagram

#### A. Automatic search of registry

Automatic search of registry and other sources to identify other similar items of less cost, or the same item of less cost from a different vendor. Purchaser automatically notified by email for instance. Purchaser can then return the item or cancel the order, and get the lower cost item instead.

Instead of "naming your own price" or reverse auctioning as it is known the present service, would record the purchase details, including the item identifier and specification and financial details, and import this information into registry.

The GAIR Algorithm would search its own and other databases for all places that sell an item and compares specifications and price. If the GAIR algorithm finds an item which matches the user criteria/filter (e.g. only notify me if a and b and...), then it will notify user by email or pager.

Alternatively, if this service is run by VISA, notification of user would be unnecessary as VISA, because they are financing transaction, can cancel one order and generate the other after having found the better deal (another e.g. of service by financier).

#### B. Auction House: provides 2<sup>nd</sup> hand buying, selling, and comparing marketplace

- 1) Provides automatic market value appraisal of asset based on purchases of others (new and used).

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- 2) Helps potential buyers to find the same product and/or the same lowest price. Advantage over Ebay is that assets were automatically registered when bought. Owner need only flag item as "on sale". (Banner ad opportunity)

#### C. Allow owners to evaluate and rate assets

Owner could input satisfaction/dissatisfaction (e.g. standardized review form). Potential buyers would search website for class of assets or particular asset for price and review information. (Banner ad opportunity)

#### D. Marketing, profiling, and other demographic studies

### IV. Asset: Digital Objects (tracking ownership, buying/selling)

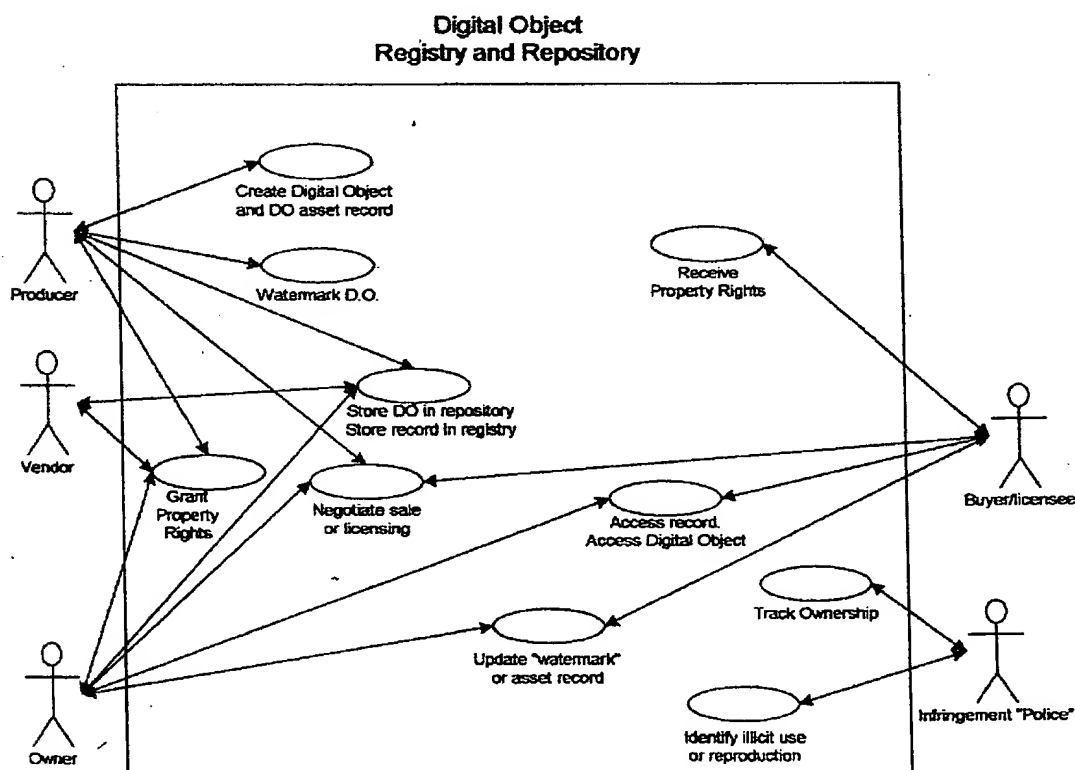


Figure 3. Digital Object registry and repository context diagram

#### A. Identification of need

There is a need, particular to the digital object (DO) industry, for tracking and maintaining records of asset ownership of digital objects to prevent IP infringements and other piracies. A digital object asset registry would solve such a need.

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## B. Methodology

Authentication license codes for utilizing DO, such as proprietary software installation codes or other codes which make a DO useable, would be stored in the registry.

### 1. Watermark

A Digital Object (DO) is created and "watermarked" by producer (e.g. Sony Records, Microsoft). Also, an existing digital object could be 'watermarked' by owner. This watermark (or watermark cypher/code) is stored in a registry. A Digital Object itself can also be stored in a repository:

- registry/repository can be proprietary (e.g. Sony Records, Microsoft); or
- centralized GAIR (managed by independent 3<sup>rd</sup> party --'Yahoo-like').

### 2. Updating the watermark

Property rights (e.g. own, license, use, etc.) of DO are conveyed to other(s). This conveyance entails "updating the watermark" to include this granting/transferring of property rights. If the watermark is read, only then additional record chronicling ownership and other data are created.

Note: "metadata watermark" contains not only the identification of the DO asset, but the property rights of all interested parties, as well as other information (e.g. insurance, appraisal, etc.).

## C. Alternative and/or additional use

A Digital Object asset registry would exist. The watermark created at production could be indelible and uneditable. The watermark of a unique DO would be the identifier that would be used to reference the asset in the DO registry. Whenever a conveyance of property rights is made, this would be logged into the registry using the watermark identifier to reference the DO asset.

This would allow individuals to maintain a registry of every DO they owned (along with history, appraisal, property rights, update rights, etc.). The owners would avoid accidentally acquiring duplicate DO. Owners (and producers) could grant property rights to others (auctions is one case).

Buyers could verify that what they are buying is authentic and not pirated or copied (this is essentially equivalent to a title history of the DO asset).

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## V. Asset: Vehicles

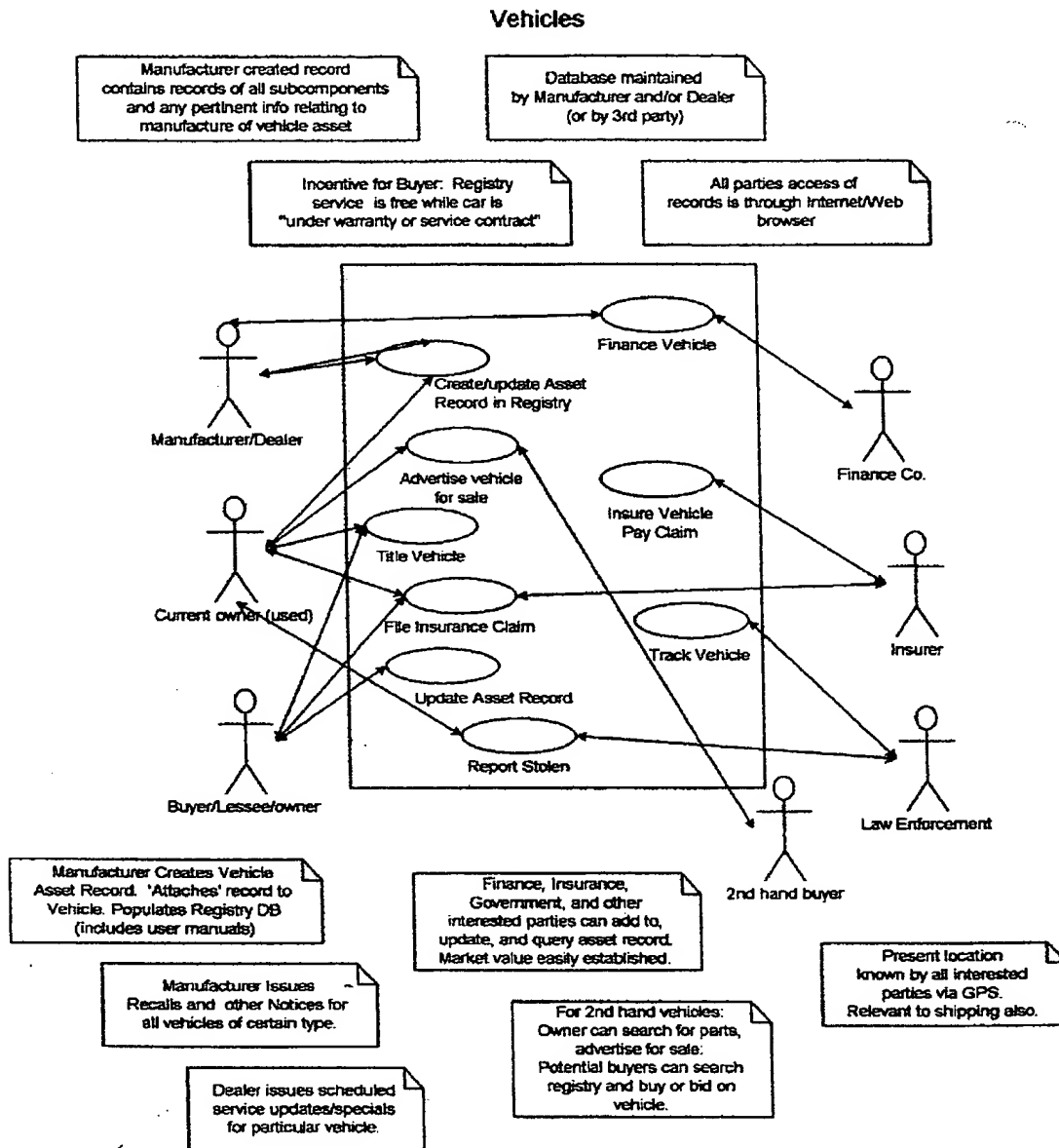


Figure 4. Vehicles context diagram

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Asset: Vehicles. Example: automobile. Other examples are: surface and subsurface watercraft, land, air and spacecraft.

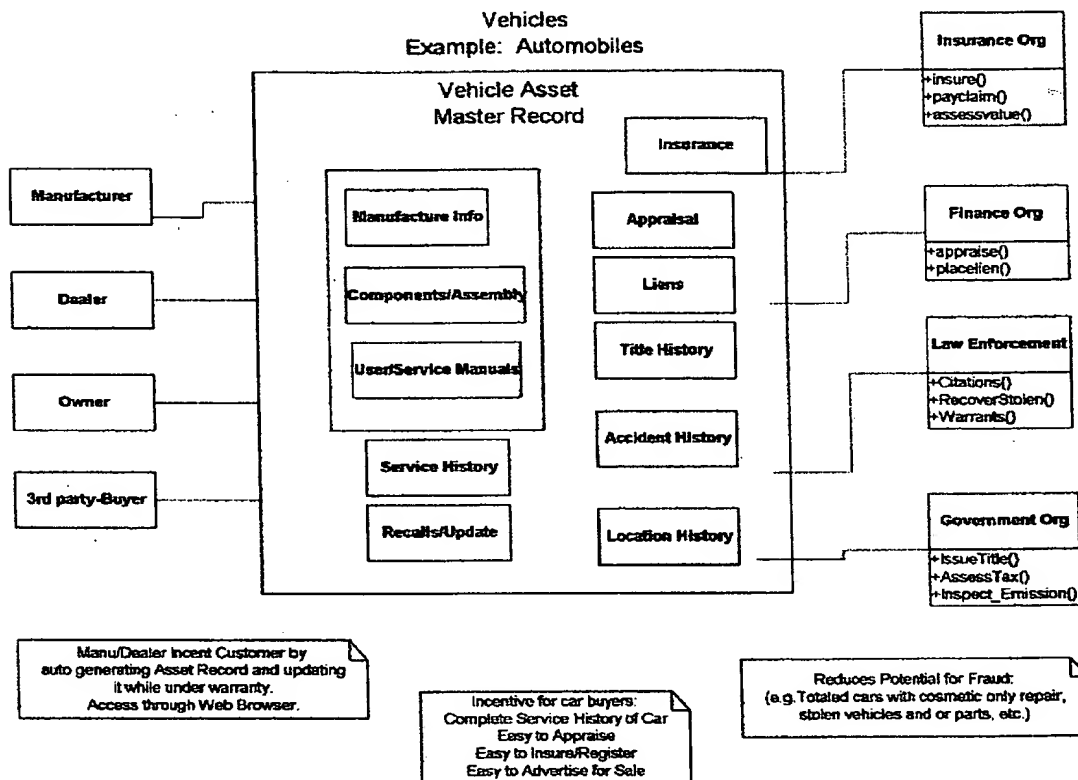


Figure 5. Example: Automobile use-case diagram

### A. Methodology

A manufacturer creates asset and record of all pertinent information including records on sub-components, assembly and other manufacturing details, warranties, specification, parts, owners manuals, scheduled service and maintenance, etc. A specific digital identifier is permanently "attached" to the vehicle.

This record could be made available to dealers and/or direct distribution centers, and consumers such that purchasing and/or stocking decisions could be made.

The 'initialized' digital asset record is transferred from manufacturer or dealer to the buyer via any digital or floppy, zip, tape, cd, dvd, or most preferably over a computer network, such that, at the appropriate time, the dealer (or finance co.) will transfer the asset record to the central GAIR or create a new record in the proprietary GAIR, and the record becomes property of the vehicle owner (purchaser, finance co.).

Manufacturer or dealer (e.g. GM) would offer this free service of providing auto buyer with a complete record of the origin and creation of the asset, and the access to recording of subsequent relevant incidents during the life of the vehicle (or duration that the auto is under warranty or service

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contract). Such incidents include manufacturer issued updates and recalls, dealer scheduled service, accidents and repairs, insurance claims, satisfaction of liens, involvement in criminal activity, transfer of ownership, etc.

Owner would be alerted automatically through the registry (e.g. via email) of any additions/changes to the asset record, such as recalls, scheduled service, change in valuation, insurance premiums due, etc. Owner would modify vehicle asset record and the appropriate party would be notified (e.g. report any change in status of the vehicle: under repair, file a claim, report stolen, for sale, etc.)

### B. Third party interests

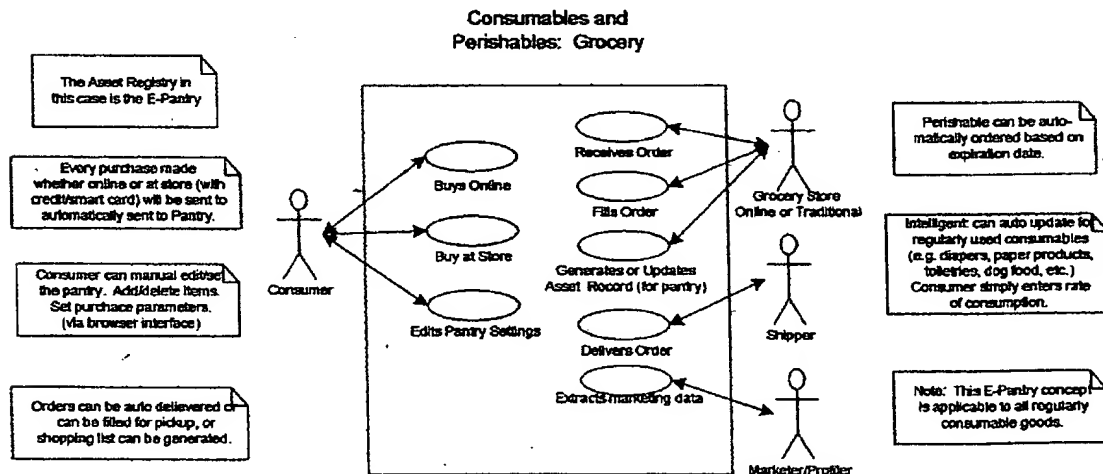
- potential buyer could search registry for vehicles for sale;
- marketing researchers could extract profiling data as well as specific review of vehicle by owners;
- For existing assets (those already purchased before "registration at production/sale" is implemented). Asset record can always be created by owner (or other interested parties).

### C. GPS to track location of asset

The registry would facilitate shipping arrangements in that the location of the asset would always be known, thus the scheduling of pick-up and delivery could be accomplished in a more efficient and seamless way. Owners, financiers, law enforcement would know where vehicle was located.

## VI. E-pantry

*For Consumables: any product or service that requires regular replenishments. Example: grocery.*



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### E-PANTRY for Online Grocery (peapod,homegrocer)

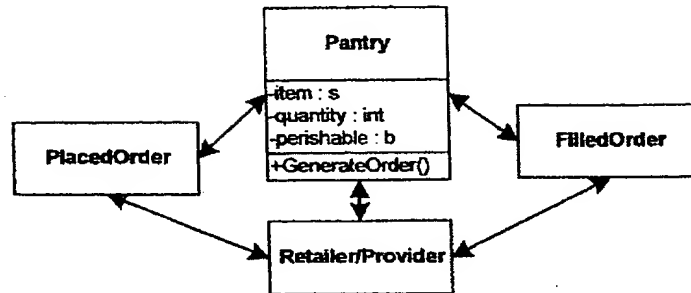


Figure 7. E-pantry use-case diagram

#### A. Methodology

Whatever is bought either online or on site (with credit/debit/smart card) will be added to registry.

Individuals and businesses will be owners of their own 'E-Pantry' where individual can order specific items, but can also set parameters such that the E-Pantry remains stocked according to the preference of the owner of the E-pantry.

Owner would set/input stocking parameters:

- 1) sets how much he wants on hand of any given item;
- 2) sets rate of consumption such that restocking orders are automatically generated (in the case of perishables, the auto order is generated based on expiration date); and/or
- 3) automatic or manual method to record consumption.

In the case where purchases are made in person at traditional grocery store (POS transaction), the individual's E-pantry is auto updated when purchases are made, which requires (credit/smart) card.

Orders could be filled by:

- 1) E-pantry order extracted and filled and delivered by independent 3<sup>rd</sup> party;
- 2) E-pantry particular to a chain (e.g. Kroger) store could fill and deliver order, or fill order and have it waiting for customer;
- 3) Shopping list generated by E-pantry, which is used by customer in conventional way.

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## VII. Medical record repository

Asset: Personal/Corporate Records; Example: Personal Medical Records

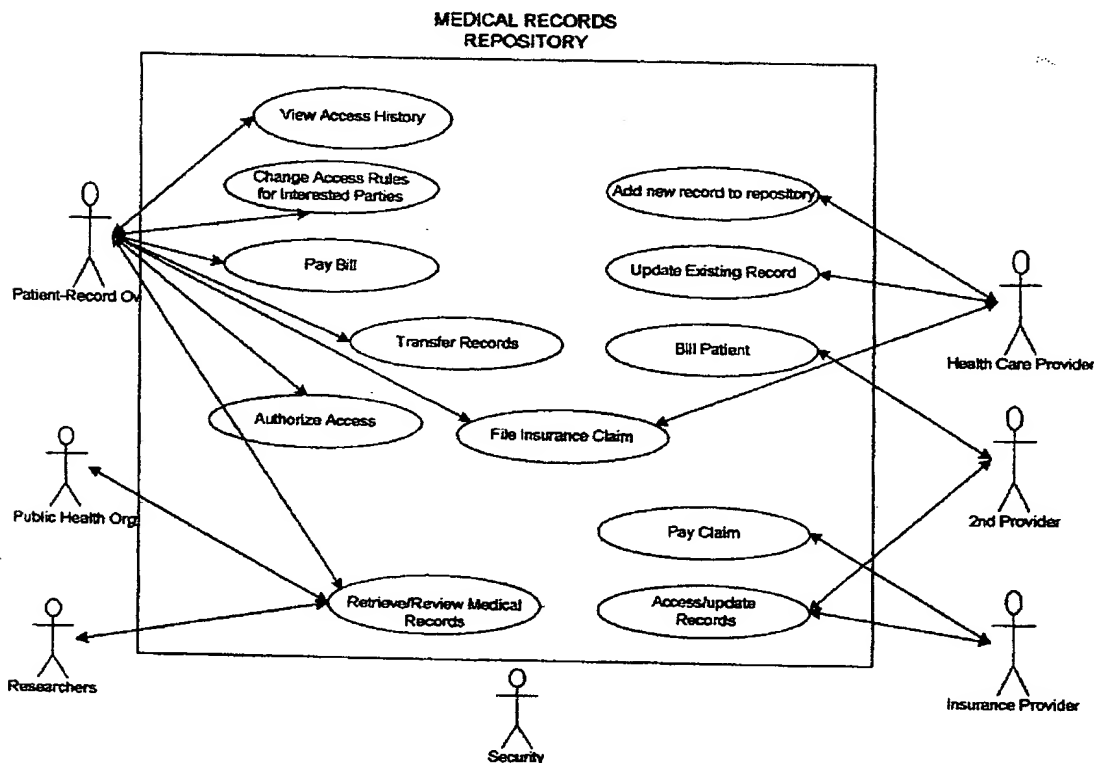


Figure 8. Medical records repository context diagram

### A. Methodology

Service to provide centralized repository of all personal medical records, in a digital format, accessible through a web browser via the Internet or other network. The primary overall advantages are related to efficiency and privacy. Efficiency in that there is a central repository which reduces or eliminates the needs to transfer records multiple times between different interested parties and to store the same record at multiple locations. Privacy in that patients would now have real-time access to prevent or allow viewing of their personal records, and a record of who created, updated or otherwise accessed their records.

The patient/owner grants limited and controlled access to their personal repository (or to individual records w/in the repository) to interested parties including health care providers, health insurance providers, public health organizations, and researchers.

Health Care Providers (doctors, hospitals, pharmacies, etc.) would add patient records to the repository. Preferably, all records would be maintained in the repository including: evaluations and diagnosis; treatment options and prescribed treatment; prescriptions; participation in clinical studies; radiographs (X-rays, CAT, MRI, Ultrasound, etc.), results of laboratory tests, etc.



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Health Insurance Organizations could track a patient's health and health care history, which would assist in policy underwriting, treatment authorizations, and claim evaluation.

Public Health and regulatory organizations (e.g. CDC, FDA) would be able to more accurately and effectively track and monitor public health issues, such as communicable disease outbreaks or medication efficacy and side effects.

Researchers could use the repository to do prospective and retrospective studies of clinical trials.

## **B. Advantages**

### **1. Patients**

- Patients would have access to all medical records and a complete history of health care.
- Reduces need to transfer records when patient:
  - a) changes geographic residence;
  - b) changes insurance organizations;
  - c) changes or visit new health care provider (moves or gets 2<sup>nd</sup> opinion).
- Patients would have an audit trail of who accessed and/or updated their records.
- The patients would be able to grant limited incremental access to different interested parties, and patients could provide direct feedback to provider and insurer.

Additional service: If patient was prescribed a drug (Rx) or diagnosed with a disease or syndrome (Dx), repository would automatically link/provide patient with various information on the medication and/or the disease/syndrome, requiring no searching on part of patient.

### **2. Health Care Providers**

- Access (with patient permission) to patient's health care history, facilitating accurate diagnosis and treatment.
- Reduces overhead regarding maintaining "hard copies" of records, and reduces/eliminates possible loss or corruption of record.

### **3. Health Insurance Organizations: ( e.g. BCBS, Aetna, Medicare/Medicaid)**

- evaluate claims;
- pay or reject claim;
- determine eligibility (e.g. pre-existing conditions);
- identify potential fraud;
- could require and/or incentivize health care providers to use system.

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## 4. Public Health-Regulatory Agencies

## 5. Research Organizations

## 6. Lawyers

- Medical malpractice;
- Disputes: patient and insurance co.; patient and provider; provider and insurance co. product liability (e.g. medication, orthoses, etc.).

## C. Best mode

## 1. Format

Records would need to be in digital format, which would require digitization of records. Many records are already in digital form because the equipment that generates the records are digital such as CAT, MRI, EEG, EKG, etc. Those records that are not digital, such as X-rays and paper records, would be converted to digital format (e.g. with a scanner). The non-digital records could be stored simply as digitized images, or they can be converted into an editable database record. Standard forms could be used by health care provider, along with digital scanning and software system that could scan the document, extracting data and inserting it into the appropriate database record.

Alternatively, the provider (or other party) could enter the data directly into a digital medium (i.e. computer). This could be a provider's own record, which is then sent to the repository or the provider could access and populate a repository record directly.

## 2. Security

Security (authentication) as well as scalability are critical issues to implementation.

## 3. Phased implementation

Service could be initially provided to a limited group of health care providers (e.g. group of physicians, hospital), or particular insurance, public health, legal, or other industry specific interested parties.

**VIII. Asset: Real property – commercial or residential**

*Raw land; new construction/developer-builder; older/existing developed property*

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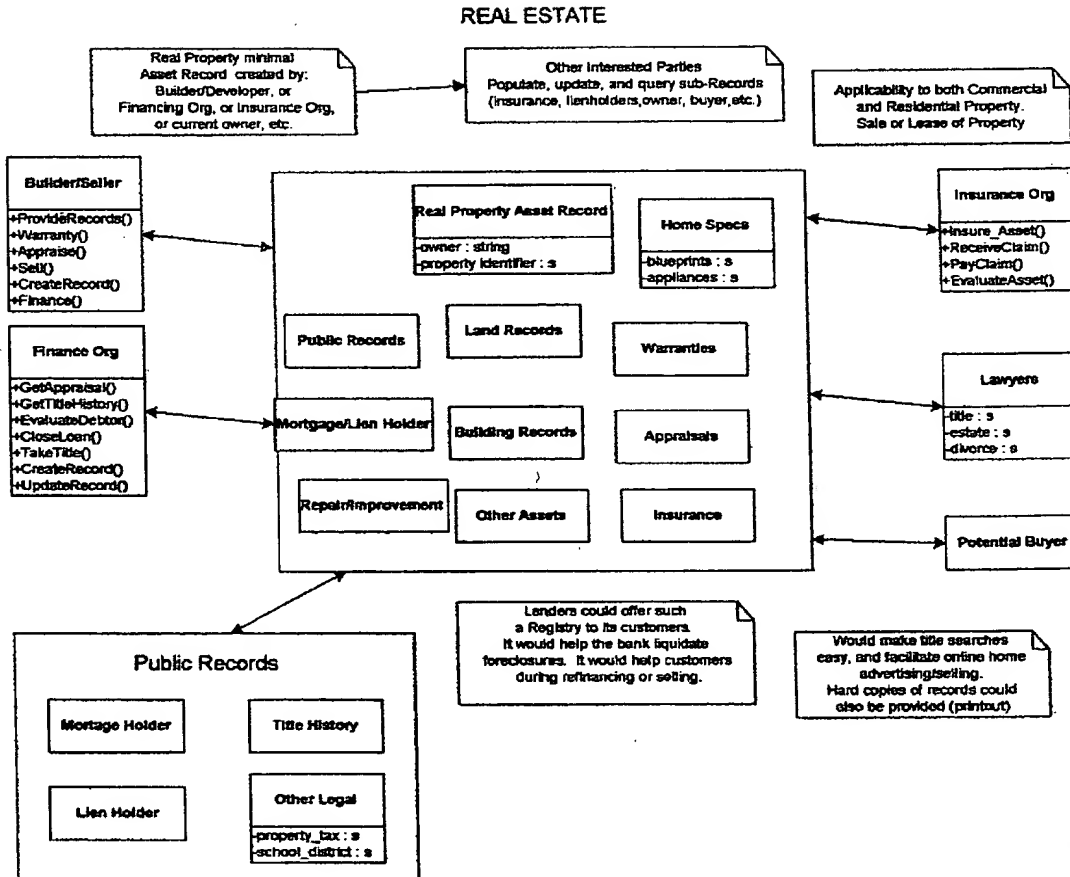


Figure 9. Real Estate use-case diagram

**A. Ways Asset Record created**

When property is:

- 1) titled: builder, lender, buyer, owner, county;
- 2) appraised;
- 3) financed.

Builder, Developer or Financier would create asset record in the case of new construction or development.

For existing assets (those already purchased before "registration at production/sale" is implemented). Asset record can always be created by owner (or other interested parties) – records added could be standard and/or custom. Dependent upon owner compiling all pertinent documents (ideally, the insurance, finance, and government record organizations will be a part of this to make it as seamless as possible).

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**B. Facilitating and Expediting real estate transactions (potential users of registry)**

- 1) Title history would be readily accessible online making it easier to establish proof of ownership in the case of sales, refinancing, asset dissolution, etc. (lenders, buyers, lawyers, etc.)
- 2) Insurance companies: value and insurance premiums; reporting additions to value; receiving and investigation claims; paying claims.
- 3) Appraisal Services – appraisals would be easier and more accurate.
- 4) Tax Assessment/School District (government).
- 5) Online advertising of properties for sale w/o need of MLS (buyers and sellers).

With such a real estate registry, the need for the multiple listing service (MLS) would be reduced as more properties became listed on the registry. Ideally, the end goal is to have all properties in the registry, which would make buying and selling real property through realtors effectively obsolete.

Dependent upon the conversion of many records (especially public records) to digital format. Could be implemented on a county by county basis (i.e. those counties which already have their records digitized).

**IX. Asset: Appliances, durable goods**

Note: similar use case diagram as that for Vehicles – please see those drawings.

*Asset: Appliances, durable goods (e.g. Sears, Home Depot, Kmart, Dell); Producer-Distributor-Retailer (Made-to-Stock and Made-to-Order). Example: Sears.*

**A. Methodology**

Producer Sears creates asset record (including asset records of sub-components). When Sears sells to a consumer (individual or business) and asset record is created in the registry and the purchaser is given an access code or identifier with which they can access the record in the registry. The record would contain all pertinent elements about the asset including warranties and the like. The registration of the asset is of course automatic.

Sears can maintain its own proprietary database, accessed via the web for instance, for Sears personnel (sales, delivery, repair, etc.) and its customers (customers can access records of the assets which they purchased from Sears). Alternatively, Sears could outsource the registration of the asset to 3<sup>rd</sup> party asset registry.

In either case, the registry would be linked to insurers and finance organizations in the respective cases that customer requested or was required to provide insurance or required financing of the asset.

Customers (owners) would be able to do the following via the Internet and registry:

- 1) report failure or malfunction and request service;
- 2) order a replacement part;
- 3) access online manuals;

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- 4) provide feedback (suggestions, comments, surveys);
- 5) ...

Sears would be able to track asset (in the cases that the asset was sold, transferred or moved), because the asset record would be update when such a transaction occurred. Sears could also issue product and documentation updates and recalls; request feedback from customers, and direct market to customers among other things.

### B. Third party

If third party maintained the GAIR registry for many producers and a variety of asset classes, then this centralized GAIR would provide the same opportunities as mentioned before:

- 1) profiling and direct marketing based on individual or groups asset portfolio;
- 2) online market-place (auction of 2<sup>nd</sup> hand items);
- 3) Product reviews based on surveys/comments from asset owners;
- 4) Banner (or other) advertisements displayed on GAIR GUI interface;
- 5) ...

## X. Asset: Weapons

*Asset: Weapons; Example: Handguns.*

### A. Identification of need

There is great interest and controversy in the regulation and restriction of handguns and handgun ownership in this and other countries (e.g. handgun restriction advocate groups versus the NRA and others). A possible middle ground could be found in the concept of a handgun registry, where all the records pertaining to each handgun is are stored in a central registry/repository. This would give the government greater oversight and potential control of handgun ownership and trafficking, while not outlawing or severely restricting the industry.

### B. Methodology

Ideally, the handgun asset record would be created by the manufacturer when the gun is produced and the record would contain all pertinent details about the handgun, including the specifications and serial number. This record would be transferred with the weapon and the registry would be updated whenever the status of the weapon was changed. Such status changes include: ownership; location; modification; licenses, etc. However, the initial registration of the record could also be created by a gun retailer at the time of sale. Older weapons could be registered by their owners at will or at the time of 3<sup>rd</sup> party sale (e.g. gun show).

Handgun manufacturers, dealers, or other 3<sup>rd</sup> parties may implement such a registry as a good-faith civic service or because they are required to by law.

Law Enforcement would find the registry of use because it would allow for the tracking of each handgun (complete ownership and status change history), thereby:

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- 1) identifying weapons used in crimes from forensic evidence;
- 2) identifying owners of lost/stolen and found/recovered weapons;
- 3) identifying illegal owners of weapons (after-the-fact background check);
- 4) allowing for online processing of gun licenses and carry permits.

Insurance organizations would have a direct way to value the asset as well as to receive and pay claims. Personal insurance (bonding) of gun owner or carrier would also be relevant

Owners could sell the weapon online or off-line, and the record of transaction would be accessible by law enforcement and other parties. Private sellers could "pre-authorize" the sale via background checks as is now done in retail outlets. Buyers would know the asset history of the weapon and would be able to automatically apply online, through the registry, for licenses and registration and insurance.

"Gun Shows" - these virtually unregulated handgun marketplaces allow for handguns (registered and unregistered) to change hand without adequate documentation. This allows and promotes illegal possession of weapons, as well as limits the ability to track a particular weapon. If each weapon transaction or transfer was recorded in a handgun registry, the aforementioned problems could be avoided, particularly with regard to non-licensed or private owners/sellers. This would apply equally to online "gun shows" or other online 2<sup>nd</sup>-hand sales including auctions.

"Smart-Gun" concept. Weapon is only fireable by owner. This concept and owner identifier (e.g. fingerprint) would be part of the asset record.

### C. Potential Implementors of Handgun Registry

- 1) Handgun manufacturers;
- 2) Handgun dealers and outlets;
- 3) Government and Law Enforcement agencies (including local municipalities);
- 4) Anti-handgun advocate groups;
- 5) Pro handgun groups (NRA).

## XI. Additional GAIR-related ideas

### A. Corporate Assets

Corporate Inventory (capital asset inventory): Companies need to track assets.

A particular company will have its in-house or out-source inventory system.

Whenever company purchases anything, an asset record is created (by producer) or transferred (by the vendor) and input directly into corporate or 3<sup>rd</sup> party's asset management system. Third party provides this standard registry to businesses and vendors.

This would be an improvement over conventional capital asset inventory management because asset record is created at production or sale of asset and therefore an additional record will not be

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required. This is exemplary of the goal of reduced 3<sup>rd</sup> party involvement: point is to lessen the transfer and "re-templating" of data.

Prior Art- Dovebid.com -Capital Asset Inventory for Business.

#### **B. Asset: Prescription Medication (Rx)**

Rx - a filled prescription generally comes with an info pamphlet and perhaps other documentation. Pharmacies and pharmaceutical companies would have those documents online, and encourage patients to visit their website for more health info (on particular condition). This would provide an advertising opportunity. They could also request feedback from patients, which would be used in profiling and marketing.

Preemptive/Proactive - email automatically sent to patient (via registry) which either includes the pertinent information regarding the Rx or which has a "downloadable hyperlink" to an executable presentation and/or web page. Could be of multiple formats, e.g. audio, foreign language etc., for blind or non-native speaker, etc. The patient does nothing, and is still accessible to the pharmaceutical company by virtue of patient's Rx registry.

#### **C. Gift registry**

Variation of bridal registry concept, but instead of being registered at one store, there would be no restriction on what type of assets were registered for through the web browser interface. Such gift registry would cover every occasion (birthday, anniversary, holiday, etc.).

Individual can list what they want in registry, while interested parties such as friends and relatives or marketing/sales organizations can use that information to buy for or advertise to that individual respectively.

Additionally or alternatively:

Individuals would be incited to give access to their personal registry records. These records could be used to profile individual and demographic interest and for direct marketing.

New service could automatically (through artificial intelligence engine) recommend specific gifts (and specific advertisements) for individuals, based on their current asset ownership or desired ownership.

#### **D. Government interests**

Examine all levels: federal, state, county, municipal:

- violations of laws and regulations: taxes, guns, alcohol, anything regulated (e.g. gun registration; vehicle emissions; subjects of federal recalls such as vehicles, drugs, foods, etc.);
- ownership, location, and value of an asset for tax purposes (e.g. personal and real property, corporations, other appreciating capital assets).

Government agency implements solution to increase efficiency: Whenever "government" (including agencies) purchase an asset, it is registered in a central registry, and thus the status of all property owned by government would be available centrally. This would facilitate inter-agency exchanges and would help reduce "waste, fraud, and abuse". Anyone who does business (i.e. sells to) with government would generate standard asset record. Government or third party would maintain registry.

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**E. Generic model for Finance Organizations (party with vested interest)**

Finance organization provides free asset registration when asset is financed through them, record to be accessed through Internet Browser (e.g. credit card (visa.com) – automatic registration, insurance, warranty).

Similar method for an insurance company: Insurance organization agrees to maintain user editable and accessible asset registry, if owner insures asset. Insurance could be automatically established at purchase and company maintains the GAIR for its clients. Prior art?: insurers allow customers to insure things online through a browser?